Research & Services | The Tumor Microenvironment and its Therapeutic Targeting (Yissum)
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IMRIC	Institute for Medical Research Israel-Canada

Scientific Background

- The Hub brings together scientists and clinicians aiming to uncover mechanisms controlling tumor development and progression, and to develop approaches for effective tumor diagnosis, prognosis and therapy.
- It is recognized that these aims must be approached both at the level of understanding the mechanisms driving the growth of the tumor cells themselves, as well as at the level of the role played by supportive cells and tissues in which tumor cells grow – the microenvironment.
- The tumor microenvironment is comprised of various types of cells, including immune cells, connective tissue cells and blood vessel cells, as well as growth factors, matrix and others. These factors in the microenvironment play a critical role in determining the ability of tumor cells to grow, invade surrounding tissue, and metastasize.
- Critical interactions between tumor cells and their microenvironment represent a new wealth of excellent therapeutic opportunities for intervention through the development of blocking drugs.
- Research in this area uses a variety of tools, including sophisticated animal models, human clinical tumor samples, and complex cell culture systems.
- The Hub represents a common working ground for basic scientists, translational researchers and clinician-scientists, by incorporating several top researchers from the Hadassah Medical Center.
- Basic researchers who develop experimental models to uncover the mechanisms underlying disease will be working with clinicians who come in contact with cancer patients on a daily basis and experience first-hand the limitations of current therapy tools.

Research Hub Goals

- Generate a framework for interaction between scientists and clinicians studying and treating cancer.
- Foster interactions and collaborations between participating scientists and group members.
- Identify openings for potential therapeutic intervention.
- Develop collaborative projects that combine basic and clinical approaches, and employ shared students and researchers.
- Develop shared resources to be utilized by member laboratories.

Hub Members and Focus

- **Rami Aqeilan, Department of Immunology and Cancer Research, Molecular and cellular function of tumor suppressors**
- **Jonathan Axelrod, Goldyne Savad Institute of Gene Therapy, Hadassah Medical Center, IL-6 signaling pathways in inflammation associated cancer and cancer**

therapies

- **Michal Baniyash, Department of Immunology and Cancer Research, Tumor immunology, cancer and inflammation, immunotherapies**
- **Rachel Bar-Shavit, Sharett Institute for Oncology, Hadassah Medical Center, GPCR signaling in tumor biology**
- **Yinon Ben-Neriah, Department of Immunology and Cancer Research, Signaling pathway in cancer development and progression**
- **Ittai Ben-Porath, Department of Developmental Biology and Cancer, Breast cancer development and progression**
- **Shmuel Ben-Sasson, Department of Developmental Biology and Cancer, Tumor angiogenesis and Anti-angiogenic therapy to treat cancer**
- **Dina Ben-Yehuda, Director, Department of Hematology, Hadassah Medical Center, Regulation of cell death in hematopoietic malignancies**
- **Yehudit Bergman, Department of Developmental Biology and Cancer Research, Epigenetics and cancer**
- **Yuval Dor, Department of Developmental Biology and Cancer Research, Pancreatic cancer**
- **Zvi Fridlender, Department of Medicine, Hadassah Medical Center, Tumor immunology, immunotherapy, lung cancer**
- **Michael Elkin, Sharett Institute for Oncology, Hadassah Medical Center, Tumor-stroma crosstalk**
- **Haya Galski, Department of Biochemistry and Molecular Biology, Targeted cancer therapy**
- **Eithan Galun, Director, Goldyne Savad Institute of Gene Therapy, Hadassah Medical Center, Inflammation induced cancer**
- **Daniel Goldenberg, Goldyne Savad Institute of Gene Therapy, Hadassah Medical Center, Inflammation and cancer, epigenetics of cancer, hepatitis C virus and liver cancer**
- **Raphael Gorodetsky, Sharett Institute for Oncology, Hadassah Medical Center, Stem cells and bone marrow transplantation**
- **Rotem Karni, Department of Biochemistry and Molecular Biology, The role of alternative splicing in cancer initiation and progression**
- **Shulamit Katzav, Department of Developmental Biology and Cancer Research, Signal transduction pathways and cancer**
- **Eli Keshet, Department of Developmental Biology and Cancer Research, Mechanisms of angiogenesis**
- **Michal Lotem, Sharett Institute for Oncology, Hadassah Medical Center, Anti-cancer T cell reactivity**
- **Ofer Mandelboim, Department of Immunology and Cancer Research, Tumor immunology**
- **Oded Meyuhas, Department of Biochemistry and Molecular Biology, Mechanism underlying the role of rpS6 phosphorylation in tumorigenesis**
- **Hovav Nechushtan, Sharett Institute for Oncology, Hadassah Medical Center, Lung and breast cancer**
- **Aviram Nissan, Department of Surgery, Hadassah Medical Center, Non-coding RNAs as biomarkers for cancer**
- **Ora Paltiel, Department of Hematology and School of Public Health, Infection and cancer, environmental factors and cancer, cancer epidemiology**
- **Zeev Paroush, Department of Biochemistry and Molecular Biology, Signal transduction in cancer**
- **Amnon Peled, Goldyne Savad Institute of Gene Therapy, Hadassah Medical Center, Chemokines and cancer**
- **Tamar Peretz, Director, Sharett Institute for Oncology, Hadassah Medical Center, Breast cancer**
- **Eli Pikrasky, Department of Immunology and Cancer Research, Heterotypic**

interactions in cancer

- **Ori Wald, Department of Surgery, Hadassah Medical Center, Lung cancer - immuno-biology, surgical diagnosis and therapy**
- **Joel Yisraeli, Department of Developmental Biology and Cancer Research, Lung cancer - immuno-biology, surgical diagnosis and therapy**

Activities include:

- Monthly seminar in which participants from the Hebrew University and Hadassah present and discuss their work.
- Yearly retreat, in which hub scientists, students and invited speakers share their work and ideas.
- Graduate course: “The Biology of Cancer”, taught by Hub members.

Contact for more information:

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